

November 28, 2024

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**Re: Response to Comments from Niagara Region and Township of West Lincoln
Land Use Compatibility Study and Noise Feasibility Study, Proposed Mixed Use
Development, North Side of St. Catharines Street, Township of West Lincoln**

Dear Enzo and Sam,

As requested, HGC Engineering has prepared this letter in response to comments from the Niagara Region and the Township of West Lincoln dated November 8, 2024, related to our studies titled “*Land Use Compatibility Study, Proposed Mixed Use Development, West Lincoln, Ontario*” dated September 12, 2024 (LUCS) and “*Noise Feasibility Study, Proposed Mixed Use Development, West Lincoln, Ontario*”, dated September 12, 2024 (NFS).

Response to Niagara Region Comments

Comments from the Region were reviewed and are included below. Our response is provided in non-italicized text below the comments.

- *Regional Public Works Growth Management and Planning Division is satisfied that the materials provided are sufficient for deeming the Draft Plan of Subdivision and Zoning By-law Amendment applications complete. As noted above, as Harbison Walker is not currently operating a revised addendum letter should be provided to confirm that Harbison Walker is a Class II facility based on a future worst-case scenario and that the recommended mitigation measures remain valid.*

In recent discussions with the Region and the Township, it was noted that Harbison Walker may not have been operating at full capacity (i.e., under the worst-case operating conditions for noise) during the periods when HGC Engineering visited the proposed development site in 2021 and 2022.

As outlined in the NFS dated Sept. 12, 2024, HGC Engineering visited Harbison Walker on other occasions in the past, specifically in 2006 and 2020, to complete Acoustic Assessments of the facility operating under worst-case operating conditions, to support the required environmental permitting requirements of the Ontario Ministry of Environment, Conservation and Parks (MECP). To address the comments from the Region, a summary of the applicable permitting methods, criteria, assessment results and potential worst-case impact of Harbison Walker on the development lands is provided, below.



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Environmental Permitting Methods

The Ontario MECP oversees permitting of industrial facilities that emit contaminants into the environment (such as noise) and provides guidelines for the assessment of stationary noise sources. NPC-300 “*Environment Noise Guideline Stationary and Transportation sources – Approval and Planning*” is the primary guideline for developing applicable sound level limits of stationary sources; however in applicable cases (i.e., when a facility qualifies based on the North American Industry Classification System (NAICS) code, which typically occurs when a facility has a lower potential for noise emissions), the MECP Environmental Activity and Sector Registry (EASR) Publication is the applicable guideline. Fundamentally, the noise criteria and assessment methods in NPC-300 and the EASR Publications are the same; NPC-300 is applicable when an industrial facility requires a formal Environmental Compliance Approval (ECA) issued by the MECP to operate, whereas the EASR Publication is applicable when a facility does not require an ECA to operate. In both cases, an industry needs to demonstrate compliance with the applicable noise limits of the MECP outlined in the respective guidelines, to legally operate.

Prior to the release of the EASR Publication by the MECP, the Harbison Walker facility required an ECA to operate. However, when the EASR Publication was released in 2017, Harbison Walker qualified for Registration based on the NAICS code, thus the facility is currently registered within the EASR of the MECP.

Noise Criteria for Stationary Sources of Sound (such as Harbison Walker)

An industrial facility is classified in MECP guidelines as a stationary source of sound (as compared to sources such as traffic or construction, for example) for noise assessment purposes. Harbison Walker is classified as a stationary source of sound. The subject site is located in a Class 2 (semi-urban) acoustical environment that has qualities representative of both Class 1 and Class 3 areas: sound levels characteristic of Class 1 during daytime (07:00 to 19:00 or to 23:00 hours); and low evening and night background sound levels defined by natural environment and infrequent human activity starting as early as 19:00 hours (19:00 or 23:00 to 07:00 hours).

The acceptability limits for stationary sources are site dependent and based on the existing ambient background sound levels in the area of the subject site. The facade of a residence (i.e., the plane of a window to a noise sensitive interior space such as a bedroom or living/dining room), or any associated usable outdoor area are considered to be sensitive points of reception. For a Class 2 semi-urban area such as this, the EASR Publication stipulates that the limit is the greater of the exclusionary minimum limit, or the hourly average level of road traffic (L_{EQ}) in any hour that the source under consideration may operate (i.e. L_{EQ} 1hr). The exclusion limits are outlined in Table 1, below.



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Table 1: Exclusionary Minimum Sound Level Limits, L_{EQ} -1hr [dBA]

Location	Daytime (07:00 to 19:00)	Evening (19:00 to 23:00)	Nighttime (23:00 to 07:00)
Plane of Window of Noise Sensitive Spaces	50	50	45
Outdoor Points of Reception	50	45	--

The MECP guidelines stipulate that the sound level impact during a “predicable worst-case hour” be considered. This is defined to be an hour when a typically busy “planned and predictable mode of operation” occurs at the subject facility, coincident with a period of minimal background sound. Compliance with MECP criteria generally results in acceptable levels of sound at residential receptors although there may still be residual audibility during periods of low background sound.

Typical ambient sound levels can be determined through prediction of road traffic volumes in areas where traffic sound is dominant. Where it can be demonstrated that the hourly ambient sound levels are greater than the exclusionary minimum limits listed above, the criterion becomes the lowest predicted one-hour L_{EQ} sound level during each respective period. At locations where the ambient sound levels are low, the exclusion limits apply.

Since the sensitive areas within the proposed development potentially affected by Harbison Walker are situated a fair distance from the roadways, and because the sensitive use buildings will be physically shielded from the roadways, the MECP exclusion limits are applicable to Harbison Walker.

Acoustic Assessment of Harbison Walker

During the site visits by HGC Engineering in 2021 and 2022, sound level measurements were conducted between the industrial facilities and subject development lands, to directly quantify the impact of Harbison Walker at the development. Based on discussions with company representatives at the time, the Harbison Walker facility was operating (in a limited capacity, but in the way it currently operates) at the time of the measurements. However, from our past involvement with Harbison Walker, the facility can operate with greater activity (and generate more noise than was observed) during the current operating conditions. Accordingly, acoustical modelling was used to assess the potential worst-case impact at the nearest / most potentially impacted noise sensitive receptors on the subject development site.

Source sound levels of the Harbison Walker facility were obtained from past Acoustic Assessments prepared by HGC Engineering in 2006 and 2020. The source sound levels were used as input to a predictive computer model (Cadna/A Version 2024 MR2, in order to quantify the predictable worst-case sound levels at the future residences. Cadna/A is a computer implementation of ISO Standard 9613-2, “Acoustics – Attenuation of Sound During Propagation Outdoors – Part 2: General Method of Calculation”, which takes into account attenuation due to distance (geometrical spreading), shielding by intervening structures, air attenuation and ground absorption. A comprehensive list of the noise sources along with additional details of the acoustical modeling are provided in the NFS.

The results of the Acoustic Assessment indicate that, under worst-case operating conditions (with Harbison Walker operating at full capacity), the noise impact is 42 dBA at the nearest and most potentially impacted noise sensitive point of reception on the proposed development property, which is within the applicable MECP limits of 50/45 dBA during the daytime and nighttime periods. In other words, the worst-case noise emissions of Harbison Walker comply with the applicable MECP criteria at the proposed development, and noise mitigation measures would not be required if the facility were to ramp back into a full “worst-case” operating condition. Figure 1, attached, shows graphical sound emission level contours of the Harbison Walker facility.

Potential Expansion of Harbison Walker

In the province of Ontario, when a stationary source / industrial facility plans to add new sources of noise, whether its part of a facility expansion, renovation, rebuild, etc., the MECP requires that an updated Acoustic Assessment be completed, to support either an updated registration within EASR or an Amended ECA, prior to the implementation of the new source(s). The MECP also requires that potential noise excesses identified as part of the Acoustic Assessment process (at both existing and proposed noise sensitive points of reception) be addressed on-site by the subject industry, and that the specific noise control measures be detailed within the updated Assessment. Therefore, if Harbison Walker were to install new sources of noise in the future that could potentially impact the subject development, compliance with the 50/45 dBA limits would need to be established by Harbison Walker, via the MECP permitting / EASR process.

Harbison Walker as a Class II Industrial Facility

The LUCS and a subsequent addendum dated September 12, 2024, prepared by HGC Engineering, identified Harbison Walker as a Class II industrial facility, with reference to observations conducted in 2021 and 2022 (when Harbison Walker was in a reduced state of operation). Considering the worst-case operating scenario for Harbison Walker (i.e., the noise impact at the development determined using the acoustical model, and the observations conducted by HGC Engineering in 2006 and 2020), the Class II industrial categorization remains applicable. Note that a Class III industrial facility is defined to include “*the outside storage of raw and finished products, large production volumes and continuous movement of products and employees during daily shift operations*”, with “*the frequent outputs of major annoyance*”; generally these were not observed under the worst-case operating conditions, thus Harbison Walker has been classified as a Class II industrial facility.

We trust that this is sufficient information for your present needs. Please do not hesitate to call if you have any further questions or require additional information.

Yours truly,

Howe Gastmeier Chapnik Limited



Andrew Dobson, BSc, INCE, LEL

Any conclusions or recommendations provided by HGC Engineering in this letter have limitations as detailed on our website:
<https://acoustical-consultants.com/limitations/>



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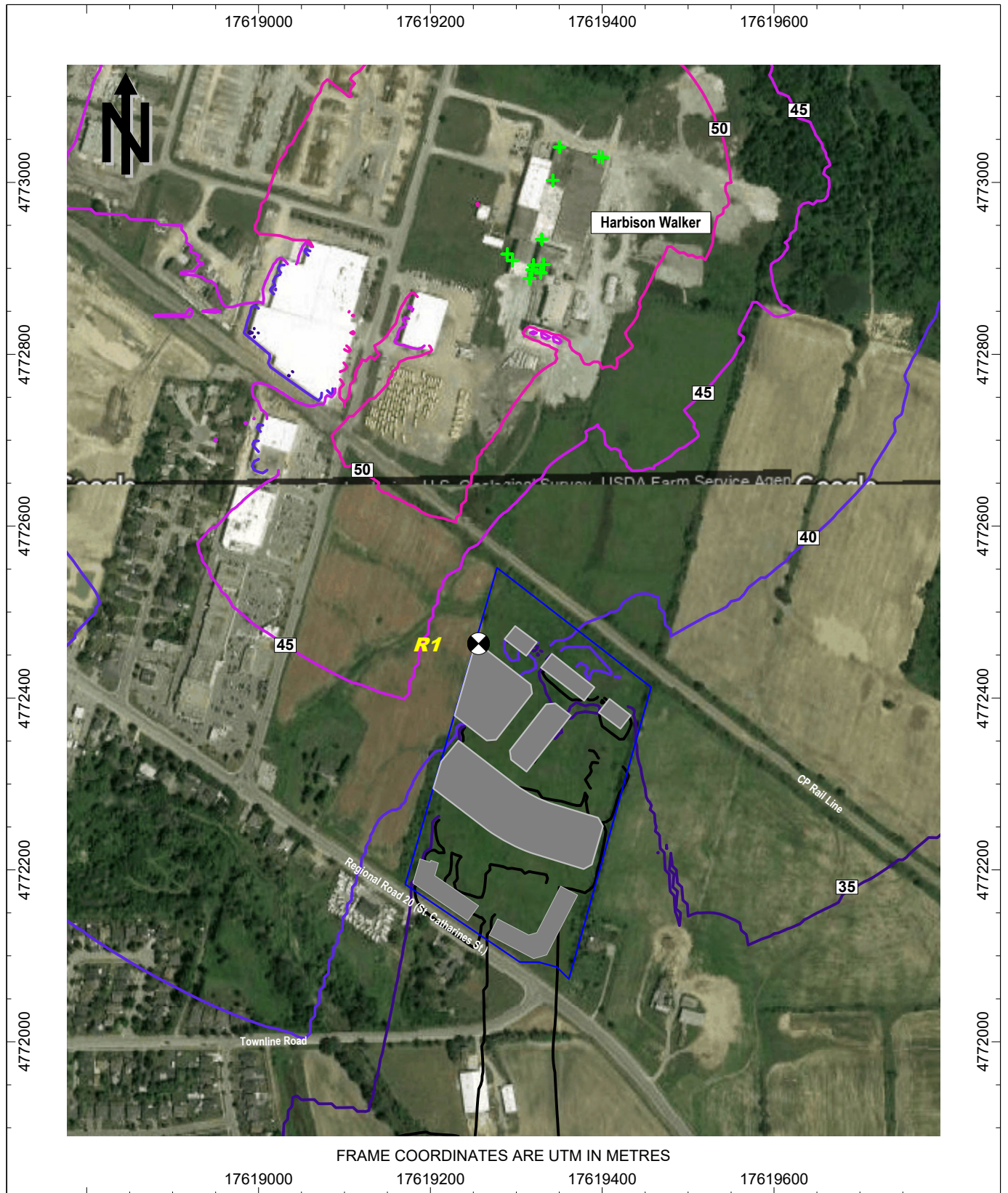


Figure 1: Modelled Sound Level Contours [Leq, dBA] of Harbison Walker Full Operation / Predictable Worst-Case Impact